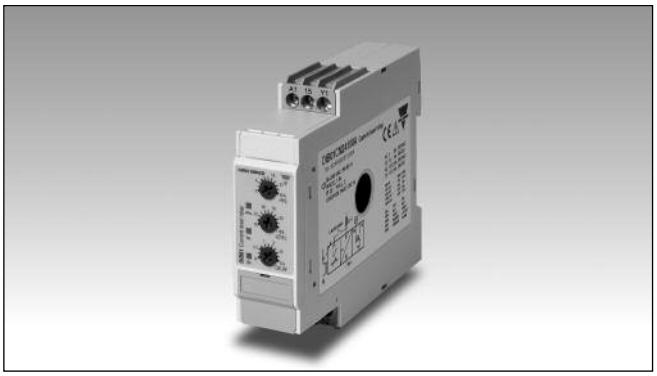
Monitoring Relays
1-Phase True RMS AC Over or Under Current
Type DIB01 100A



- **TRMS AC over or under current monitoring relay**
- **Current measuring through built-in current transformer**
- **Selection of measuring range by DIP-switches**
- **Measuring ranges from 2 A to 100 A AC**
- **Adjustable current on relative scale**
- **Adjustable hysteresis on relative scale**
- **Adjustable delay function (0.1 to 30 s)**
- **Programmable latching or inhibit at set level**
- **Output: 8 A SPDT relay N.D. or N.E. selectable**
- **For mounting on DIN-rail in accordance with DIN/EN 50 022**
- **22.5 mm Euronorm housing**
- **LED indication for relay, alarm and power supply ON**
- **Galvanically separated power supply**

Product Description

DIB01 is a precise TRMS AC over or under current (selectable by DIP-switch) monitoring relay.
Owing to the built-in latch function, the ON-position of the relay output can be maintained. Inhibit function can be used to avoid relay operation when not desired (maintenance, transitions).
The LED's indicate the state of the alarm and the output relay. Through the built-in current transformer it is possible to monitor loads up to 100 A AC.

Ordering Key

DIB 01 C M24 100A

- **Housing**
- **Function**
- **Type**
- **Item number**
- **Output**
- **Power supply**
- **Measuring range**

Type Selection

Mounting	Output	Measuring range	Supply: 24 VDC and 24 to 240 VAC
DIN-rail	SPDT	2 to 100 A AC	**DIB 01 C M24 100A**

Input Specifications

Input (current level)		
DIB01 100A	Built-in current transformer	
Measuring ranges		
Selectable by DIP-switch		**Max current**
2 to 20 A AC		120 A
5 to 50 A AC		120 A
10 to 100 A AC		120 A
Max. current for 30 s	250 A	
Max. current for 1 s	2000 A	

Contact input	
DIB01	Terminals A1, Y1
Disabled	Open
Enabled	< 10 kΩ
Latch disable	> 500 ms

Supply Specifications

Power supply	Overvoltage cat. III (IEC 60664, IEC 60038)
Rated operational voltage through terminals: A1, A2	24 VDC - 15% +10% 24 to 240 VAC ± 15% 45 to 65 Hz
Dielectric voltage	
Supply to input	4 kV
Supply to output	4 kV
Input to output	4 kV
Rated operational power	
DC	1 W
AC	1 W / 35 VA

Output Specifications

Output		SPDT relay
Rated insulation voltage		250 VAC
Contact ratings ($AgSnO_2$)		μ
Resistive loads	AC 1	8 A @ 250 VAC
	DC 12	5 A @ 24 VDC
Small inductive loads	AC 15	2.5 A @ 250 VAC
	DC 13	2.5 A @ 24 VDC
Mechanical life		≥ 30 x 10^6 operations
Electrical life		≥ 10^5 operations (at 8 A, 250 V, cos φ = 1)
Operating frequency		≤ 7200 operations/h
Dielectric strength		
Dielectric voltage		≥ 2 kVAC (rms)
Rated impulse withstand volt.		4 kV (1.2/50 μs)

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General Specifications

Power ON delay	1 s ± 0.5 s or 6 s ± 0.5 s
Reaction time	
Alarm ON delay	< 100 ms
Alarm OFF delay	< 100 ms
Accuracy	(15 min warm-up time)
Temperature drift	± 500 ppm/°C
Delay ON alarm	± 10% on set value ± 50 ms
Repeatability	± 0.5% on full-scale
Indication for	
Power supply ON	LED, green
Alarm ON	LED, red (flashing 2 Hz during delay time)
Output relay ON	LED, yellow

Environment	(EN 60529)
Degree of protection	IP 20
Pollution degree	3
Operating temperature	-20 to 60°C, R.H. < 95%
Storage temperature	-30 to 80°C, R.H. < 95%
Housing dimensions	22.5 x 80 x 99.5 mm
Weight	Approx. 155 g
Screw terminals	
Tightening torque	Max. 0.5 Nm acc. to IEC 60947
Approvals	UL, CSA
CE Marking	Yes
EMC	Electromagnetic Compatibillity
Immunity	According to EN 61000-6-2
Emission	According to EN 61000-6-3

Mode of Operation

DIB01 monitors AC over or under current through an internal current transformer.

Example 1
(connection between terminals A1, Y1 - latching function enabled - Relay ND)
The relay operates and latches in operating position when the measured value exceeds (or drops below) the set level for more than the set delay time. Provided that the current has dropped below (or has exceeded) the set point (see hysteresis setting), the relay releases when the interconnection between terminals A1, Y1 is interrupted or the power supply is interrupted as well. The red LED flashes until the delay time has expired.

Example 2
(no connection between terminals A1, Y1 - latch function disabled - Relay ND)
The relay operates when the measured value exceeds (or drops below) the set level for more than the set delay time. It releases when the current drops below (or exceeds) the set level (see hysteresis setting) or when power supply is interrupted.

Note
When the inhibit contact is opened, if the input signal is already in alarm position, the delay time needs to elapse before relay activation.

Function/Range/Level and Time Delay Setting

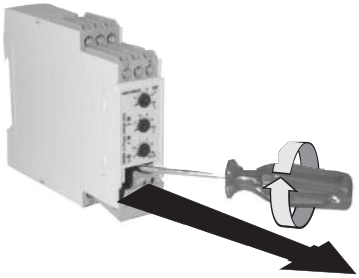
Adjust the input range setting DIP switches 1 and 2 as shown below.
Select the desired function setting DIP switches 3 to 6 as shown below.
To access the DIP switches open the grey plastic cover as shown below.

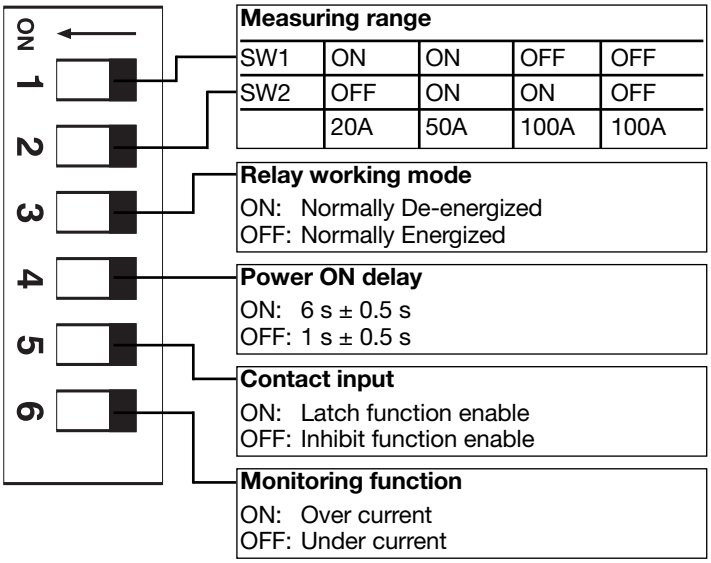
Selection of level and time delay:

Upper knob:
Setting of hysteresis on relative scale: 0 to 30% on set value.

Centre knob:
Current level setting on relative scale: 10 to 110% on full scale.

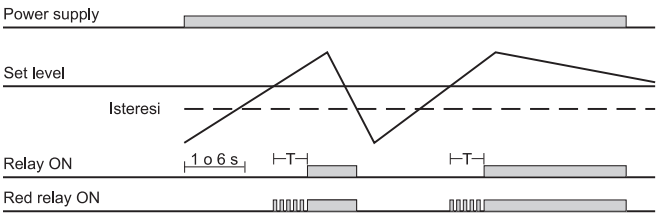
Lower knob:
Setting of delay on alarm time on absolute scale (0.1 to 30 s).



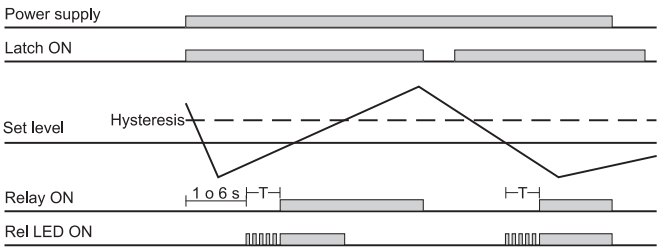


Operation Diagrams

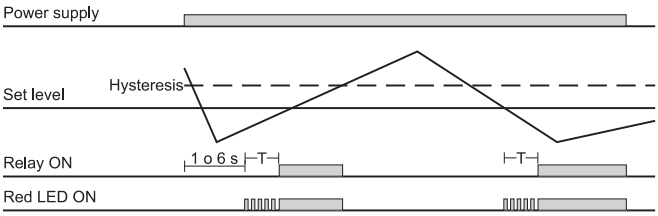
Over current - N.D. relay



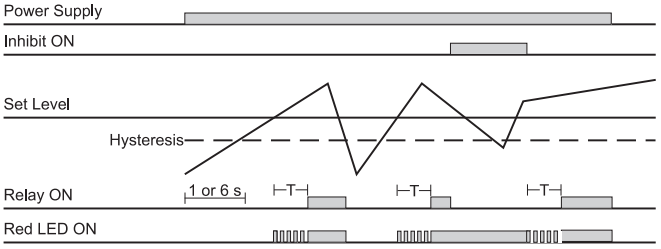
Under current - Latch function - N.D. relay



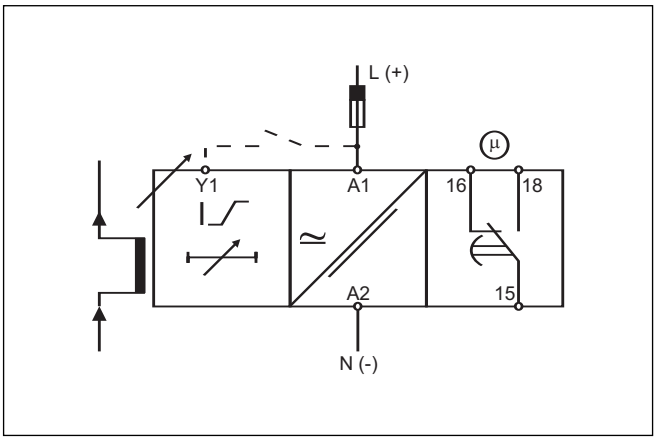
Under current - N.D. relay



Over current - Inhibit function - N.D. relay



Wiring Diagram



Dimensions